SONY®

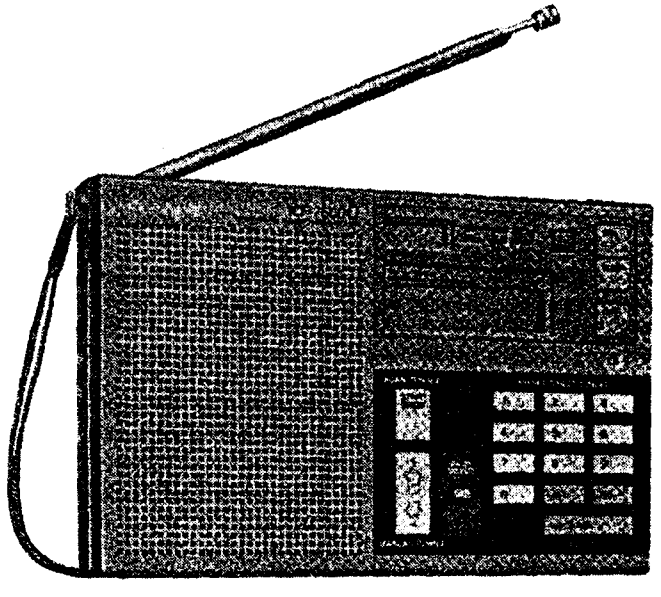
FM/LW/MW/SW PLL SYNTHESIZED RECEIVER

ICF-7600D

SAME ICF-2002 MODEL

OPERATING INSTRUCTIONS

Before operating the set, please read this manual thoroughly.
This manual should be retained for future reference.



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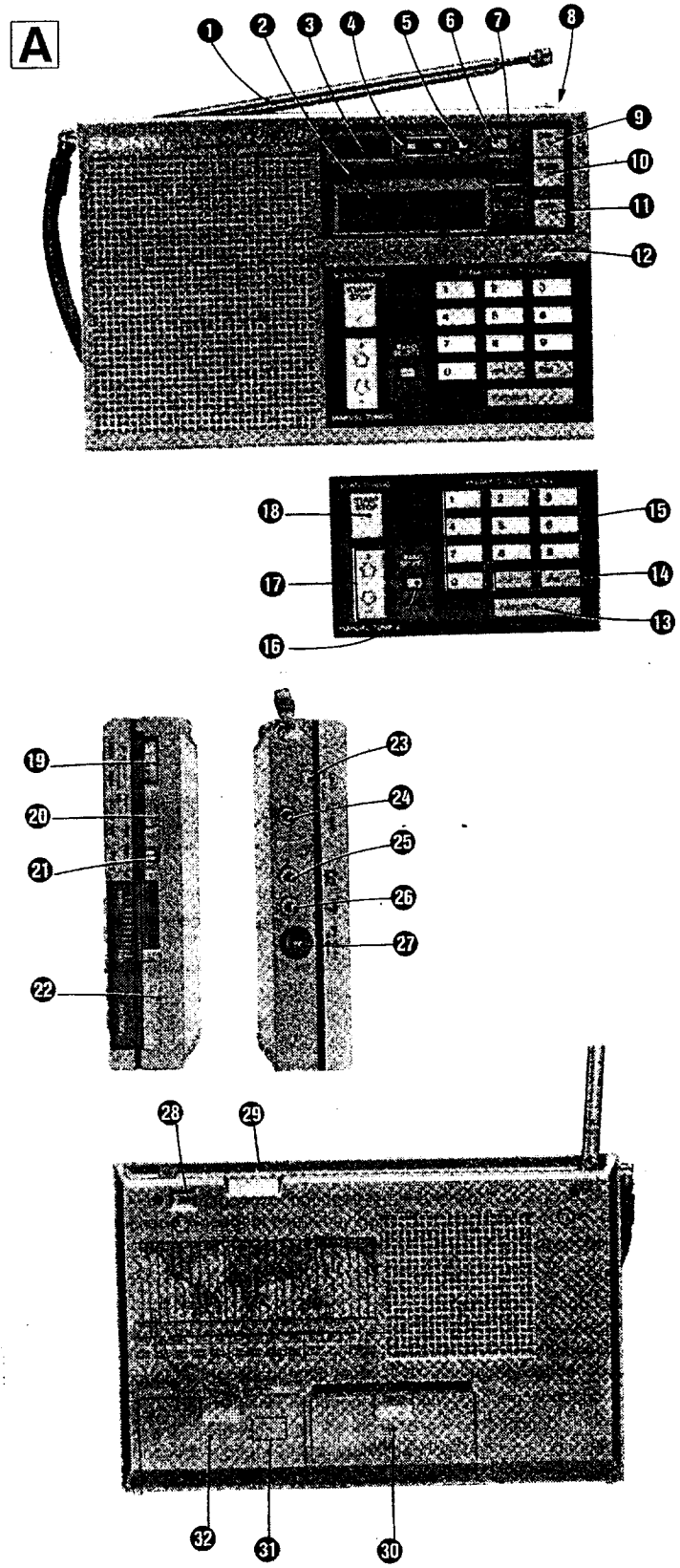
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English

WARNING

To prevent fire or shock hazard, do not expose the set to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

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FEATURES

- An FM/LW/MW/SW portable BCL (Broadcasting Listener) radio with world-wide band coverage.
- Quartz controlled PLL (Phase Locked Loop) synthesizer system uses a microcomputer to make pinpoint tuning easy. The tuned frequency is digitally displayed.
- Choice of direct, preset, scan or manual tuning.
- Up to ten stations can be preset so that they can be tuned in with the press of a button.
- Band select function to immediately search the broadcast band such as FM, LW, MW and SW, and to facilitate scan tuning and manual tuning.
- Timer standby function to receive a desired broadcast at the desired time.
- Sleep timer turns the radio off automatically in 65 minutes.
- Three different power sources: internal batteries, house current or a car battery.

PRECAUTIONS

- Operate the radio only on 6 V dc with four IEC designation R6 batteries (size AA).
For ac operation, use the ac power adaptor supplied for this set.
Do not use any other ac power adaptor.
For car battery operation, use the car battery cord recommended for this set. Do not use any other car battery cord.
- Operate the computer back up/clock only on 3 V dc with two IEC designation R6 batteries (size AA).
- When the set is not to be used for a long period of time, remove the batteries to avoid set damage from battery leakage.
Caution: When both the radio and computer back up/clock batteries are removed, the preset stations and timer-setting time will be erased. When you reinstall these batteries, this information must be input again.
- When the set is to be operated extensively on other power sources than batteries, remove the radio batteries.
- Disconnect the ac power adaptor from the wall outlet when the set is not to be used for a long period of time. The MAIN POWER switch on the radio does not turn the ac power adaptor off.
- The nameplate indicating operating voltage, etc., is located on the back of the set.
- Use the set within a temperature range of 0°C to 40°C (32°F to 104°F). If it is used in temperatures outside this range, numbers may appear on the frequency and clock display which have nothing to do with the frequency being received. If it is used in temperatures lower than this range, the numbers displayed may change very slowly. These irregularities will disappear and there will be no damage to the set when the set is used in its recommended temperature range.
- Do not leave the set near heat sources, such as radiators or air-ducts, or in a place subject to direct sunlight, excessive dust, moisture, rain, mechanical vibration, or shock.
- Should any solid object or liquid fall into the set, remove the batteries, and have the set checked by qualified personnel before operating it any further.
- Since a strong magnet is used for the speaker, metallic objects such as pins, etc., may cling to the set. Keep personal credit cards using magnetic coding, recorded tapes, and spring-wound watches away from the set to prevent damage by the magnet.
- When the case becomes soiled, clean it with a soft cloth dampened with a mild detergent solution. Never use abrasive cleansers or chemical solvents, as they may mar the case.
- In vehicles or in buildings, radio reception may be difficult or noisy. Try listening near a window.
- When there is lightning and you are using an external antenna, immediately disconnect the ac power adaptor (if connected) from the wall outlet. Never touch the antenna wire when there is lightning storm.
- Never connect a ground wire to a gas pipe.
- Reception of 450 kHz, 25385 kHz, 27025 kHz and 27475 kHz may be difficult because of internal spurious signals generated by the built-in oscillators.

If you have any question or problem concerning your set that is not covered in this manual, please consult your nearest Sony dealer.

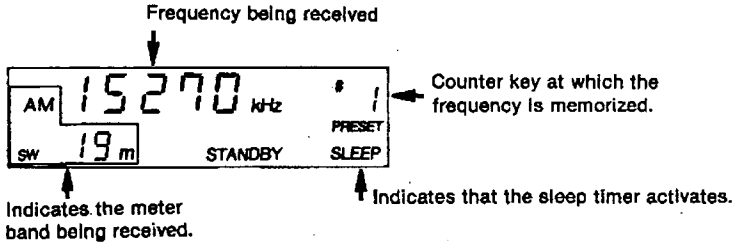
LOCATION AND FUNCTION OF CONTROLS

See photo [A] on page 3.

Front panel and right side

❶ Telescopic antenna
Used for both FM and SW reception.

❷ Frequency display
Displayed as follows:



❸ Time display
Displayed by 24 hours.
The timer-setting time will be displayed when the SET button is pressed.

❹ Time adjust button
Press the H (hour) button and M (minute) button while pressing the TIME SET button to adjust the clock to the current time. See page 13.

❺ SET (timer setting) button
Press the H button and M button while pressing the SET button to set the timer.

❻ STANDBY (timer standby) button
Press this button after setting the timer.

❼ TUNING indicator
The indicator illuminates when a signal is received.

❽ MAIN POWER switch
Set this switch to ON before pressing the ON button to turn on the radio.
Set it to OFF when carrying the radio.
With this switch at OFF, the power will not turned on even if the ON button is pressed accidentally.

❾ ON button
Press this button to turn the radio on.

❿ SLEEP timer button
Press this button to set the sleep timer.

⓫ OFF button
Press this button to turn the radio off.

⑫ ENTER key
Used to input a station to one of the counter keys for preset tuning.

⑭ EXECUTE key
After inputting the desired frequency with the FM or AM key and the counter keys, press this key to tune the frequency in.
This is called "direct tuning".

⑬ FM/AM key
Used to input a frequency for direct tuning.

⑮ Counter keys
Used to input a frequency and preset it. If you punch in a desired frequency with the FM or AM key and the counter keys, the frequency will appear in the frequency display.

⑯ BAND SELECT key
Used with [+] (plus) key or [−] (minus) key to continuously search a broadcast band such as FM, LW, MW and SW, or to search the meter bands of SW.

⑰ [+] (plus)/ [−] (minus) key
Used with the BAND SELECT key to search the desired broadcast band and tune the frequency in correctly for manual tuning.
If you press [+] key or [−] once, the tuned frequency will be increased or decreased by the following intervals:

FM: 0.1 MHz	MW: 9 kHz
LW: 3 kHz	SW: 5 kHz

If you keep the key depressed, the frequency changes continuously.
The MW interval of 9 kHz is preset at the factory but you can change to the interval of 10 kHz to match the MW frequency allocation system of the country where you will use the unit. See page 18.

⑱ START/STOP key
If you press this key, the radio begins searching for a station, scanning the broadcast band of the frequency inputted by direct tuning or searched for by manual tuning. Scanning stops automatically for 1.5 seconds when a station is received. Press the START/STOP key again to stop the scanning. See "SCAN TUNING" on page 20.

⑲ FINE TUNING control
Adjust this control for better reception of LW, MW or SW.

⑳ AM MODE selector
NORM: Normally set the selector to this position.
FINE: Set to this position for better reception of LW, MW and SW and adjust the tuning with the FINE TUNING control.
SSB: For SSB/CW reception, set to this position and adjust the tuning with the FINE TUNING control.

㉑ TONE control
NEWS: For listening to news.
MUSIC: For listening to music.

㉗ VOLUME control

㉘ SENS (FM/AM sensitivity) selector
Normally set this selector to HIGH. Set it to LOW when the sound is distorted due to strong signals or when there is interference.

㉙ EXT ANT (external antenna) jack
Connect the supplied external antenna connector. See page 24.

㉕ ⌧ Recording output jack
For recording radio programs with a tape recorder, connect the optional RK-69A connecting cord.

㉖ ⑨ Earphone jack
For private listening with an earphone. When the earphone is plugged in, the speaker is automatically disconnected.

㉗ DC IN 6 V (external power input) jack
For operation from an external power source.

㉘ TIME SET button
Used with H and M button at the front to adjust the current time.

㉙ 12/24 hour selector
You can choose either 12 hour indication or 24 hour indication by switching this selector.

㉚ Radio battery compartment

㉛ 9 kHz/10 kHz selector (in the computer back up/clock battery compartment)
Set this selector according to the MW frequency allocation system of your country. See page 18.

㉜ Computer back up/clock battery compartment

RADIO POWER SOURCES

For radio operation, computer back up/clock batteries as well as radio batteries are necessary.

BATTERIES

Radio battery installation

Insert four IEC designation R6 batteries (size AA) with correct polarity, following illustration [B] on page 4.

- The set cannot be operated on the internal batteries when the ac power adaptor or car battery cord is connected to the set.
- When the set is not to be used for a long period of time or is to be operated extensively on other power sources, remove the batteries to avoid damage caused by battery leakage and corrosion.

Radio battery life

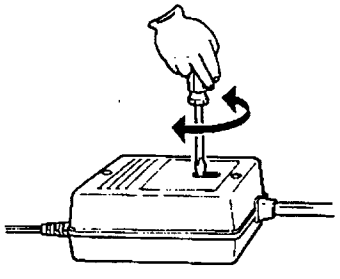
You can expect Sony SUM-3(NS) New Super batteries to last for approx. 12 hours when listening for four hours a day at a normal volume. When the sound becomes weak or distorted, replace all batteries with new ones.

HOUSE CURRENT

Use the supplied AC-240 ac power adaptor. The adaptor operates on either 110 (99 - 121)*, 120 (108 - 132), 220 (198 - 242) or 240 V (216 - 264 V) ac, 50/60 Hz.

* Range of voltage allowable shown in parentheses.

1 Before connecting the adaptor to a wall outlet, be sure to check whether the input selector is correctly set to your local power line voltage. If necessary, turn the selector with a screwdriver so that you can see the proper voltage figure.



2 Connect the adaptor as in illustration [C] on page 4.

Notice for the customers in the United Kingdom

IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:

Blue: Neutral
Brown: Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.

The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

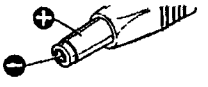
12V CAR BATTERY

Connect the Sony DCC-127A or DCC-240 car battery cord (optional) as in illustration [D] on page 4.

- Before connecting, be sure to read the instruction manual for the car battery cord.
- Reception may be affected by ignition noise while the engine is in operation.

Notes

- When the ac power adaptor or car battery cord is connected to the radio DC IN 6 V jack, the internal batteries (if present) are automatically disconnected.
- If a car battery cord or an ac power adaptor not manufactured by Sony is used, a fuse must be installed in the battery cord or the ac power adaptor and the polarity of the plug must be as illustrated.



COMPUTER BACK UP/CLOCK BATTERIES

Be sure to install the computer back up/clock batteries as well as the radio batteries.
These batteries are used to back up the microcomputer which controls the radio and operates the clock.
Insert two IEC designation R6 batteries (size AA) with correct polarity following illustration [E] on page 4.

After installation of the radio and computer back up/clock batteries, when you press the ON button, AM 153 kHz will appear in the frequency display and the radio will operate properly.

Computer back up/clock batteries life

About one year of operation can be expected when using Sony SUM-3 (NS) New Super batteries.
Note: Be sure to replace both computer back up/clock batteries once a year to avoid damage from leaking batteries.

Notes on replacement of the batteries

- When you replace both the radio and computer back up/clock batteries, be sure to preset the frequencies and set the timer setting again. When these both batteries are removed, the frequency of the station and the timer-setting time previously set will disappear.
- When the computer back up/clock batteries are exhausted, it may happen that the frequency display will be faint.

Note: When the air is especially dry, the following may be caused by static electricity, but there is no cause for alarm:

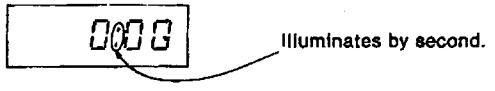
- The indication in the time and the frequency display disappears.
- Irregular figures appear in the time and the frequency display.
- The indication preset at the factory—0:00 or AM 153 kHz—appears in the time or frequency display.
- Frequencies cannot be tuned in.

If any of these things happen, remove and re-install the radio and the computer back up/clock batteries.

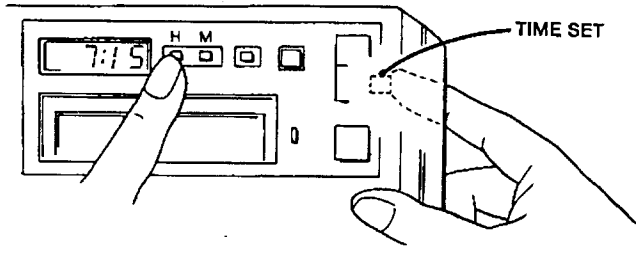
CLOCK ADJUSTMENT

The current time is displayed by the built-in digital clock in 24-hour display but can be displayed in the 12-hour system by switching the 12/24 hour selector.
The timer function activates to receive a desired broadcast at the desired time.

1 Install the computer back up/clock batteries.
The following display will appear in the time display

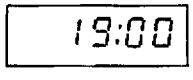


2 While pressing the TIME SET button at the rear, press the H button and the M button to adjust the current time.
• The H button is for setting the hour and the M button is for setting the minute.
• Each time the H button or the M button is momentarily pressed, the hour or the minute digits advance by one. When the button is kept depressed, the hour or the minute digits advance rapidly. Even if the M button is pressed when the digits are at "59" the minute digits return to "00", so you can adjust either the hour or the minute first.

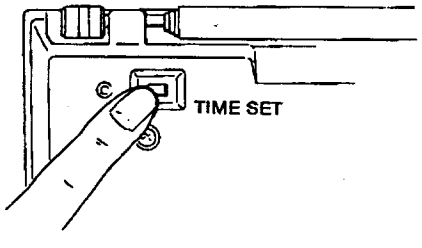


ZERO SECOND ADJUSTMENT
If you want to adjust the time exactly to the second with a radio or telephone time signal, proceed as in the following example.

Example: To set to 19:00 to the second
1 Adjust the time indication to 19:00 as described before.

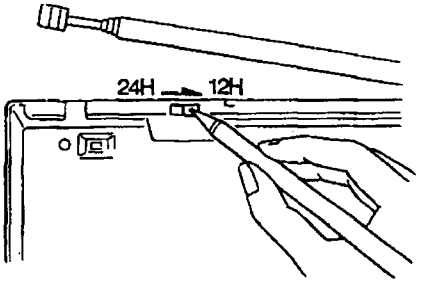


2 As soon as you hear the time signal on the telephone, radio or TV, press the TIME SET button.
The clock will then begin to operate, showing the precise time of day.

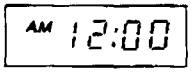


TO CHANGE THE TIME DISPLAY FORMAT

The time display format of this radio is preset at the factory to 24-hour display. You can change to a 12-hour display by switching the 12/24 hour selector in the direction of the arrow.



Check the AM/PM indication.
AM 12:00 = midnight
PM 12:00 = noon



Caution: After changing the time display format, **be sure to pass 24 hours and readjust the time with the TIME SET button and the H button.**

ANTENNA ADJUSTMENT

FOR FM RECEPTION

Pull out the telescopic antenna and adjust its length, angle and direction for optimum reception. See illustration F-1 on page 4.

FOR SW RECEPTION

Pull the telescopic antenna out to its full length.
See illustration F-2 on page 4.

- If there is a fluorescent lamp just above the set and reception is noisy, incline and shorten the telescopic antenna.

FOR MW/LW RECEPTION

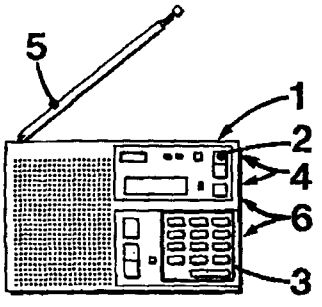
Retract the telescopic antenna. The built-in ferrite bar antenna activates. Since this antenna is directional, rotate the set horizontally for optimum reception, if necessary. See illustration F-3 on page 4.

NOTES

- If reception is unsatisfactory with the telescopic antenna or the built-in ferrite bar antenna, connect an external antenna. When using an external antenna, retract the telescopic antenna. To connect an external antenna, see page 24.
- In vehicles or in buildings, radio reception may be difficult or noisy. Try listening near a window.

DIRECT TUNING

If you know the frequency of a station to be received, you can tune in the station easily by direct tuning.
The numbers in the illustration refer to the sequence of operation.



1 Set the MAIN POWER switch to ON.
2 Press the ON button.
3 Press either FM or AM, input the frequency of the station to be received and then, within 5 seconds, press EXECUTE. The station will be tuned in.
Refer to "How to input a frequency to the keys".
4 Tune correctly with the FINE TUNING control, if necessary.
See page 22.
5 Adjust the telescopic antenna for FM/SW reception. Rotate the set horizontally for LW/MW reception. See page 14.
6 Adjust the volume with the VOLUME control and tone quality with the TONE control.
NEWS: for listening to news
MUSIC: for listening to music

HOW TO INPUT A FREQUENCY TO THE KEYS

The frequency range of this radio is:
FM: 87.6 to 108.0 MHz (type 1 model), 76.0 to 108.0 MHz (type 2 model)
AM: 153 to 29995 kHz
Type 1 model: for France
Type 2 model: for other countries
Press either FM or AM, and the counter keys, then press EXECUTE.
The station will be tuned in.
Note: Press EXECUTE within 5 seconds after pressing the counter keys. If you do not, the previous station will come back again.
The frequency which this radio receives is displayed by the following allocation depending on the broadcast band. This happens because the frequencies are allocated at the intervals shown below. Therefore, if you input a frequency not at these intervals, the frequency just below will be tuned in and be displayed.
For example, if you input AM 1,000 kHz with the tuning interval set to 9 kHz, AM 999 kHz will be tuned in and be displayed.

FM: 0.1 MHz	SW: 5 kHz
MW: 9 kHz *	LW: 3 kHz

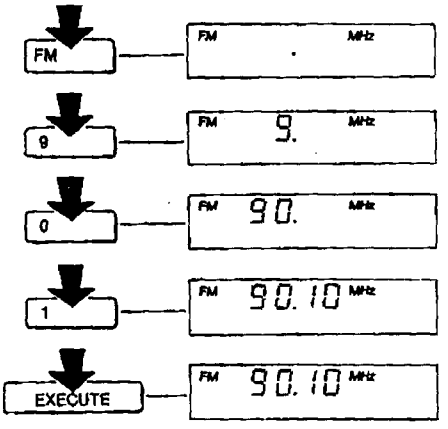
* This tuning interval is preset at the factory but can be changed to 10 kHz by switching the 9 kHz/10 kHz selector in the computer back up/clock battery compartment. See page 18.

Input a frequency beginning at the digit farthest to the left.

Example 1: FM 90.1 MHz

1 Press [FM] and the counter keys in the order [9], [0], [1]. "90.10 MHz" is displayed in the frequency display.

2 Press [EXECUTE].

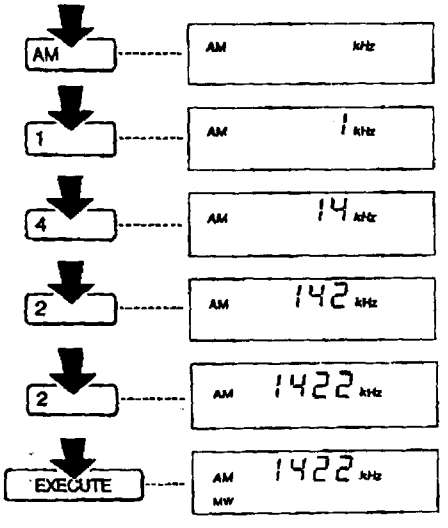


• When you input a frequency whose figures to the right of the decimal point are 00, as 90.00 MHz, press [FM] and the counter keys [9] and [0], and press [EXECUTE].

Example 2: AM 1,422 kHz

1 Press [AM] the counter keys in the order [1], [4], [2], [2]. "1422 kHz" is displayed in the frequency display.

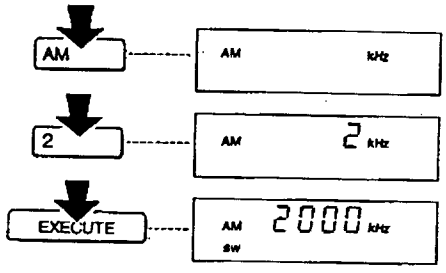
2 Press [EXECUTE].



To input an AM frequency whose three righthand digits are 000

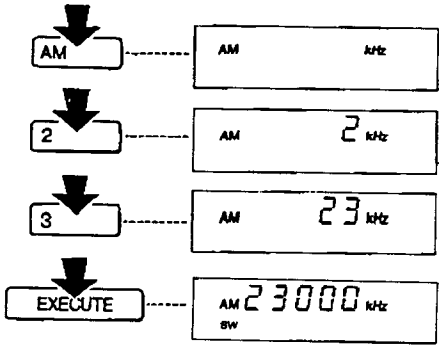
Example 1: AM 2,000 kHz

1 Press [AM] and [2] counter key.
2 Press [EXECUTE]. "2000 kHz" is displayed in the frequency display.



Example 2: AM 23,000 kHz

1 Press [AM], [2] and [3].
2 Press [EXECUTE]. "23000 kHz" is displayed in the frequency display.



Note: If you input a number higher than 30, [TRY AGAIN] ! will flash on and off in the frequency display, as a frequency higher than 30,000 kHz cannot be received.

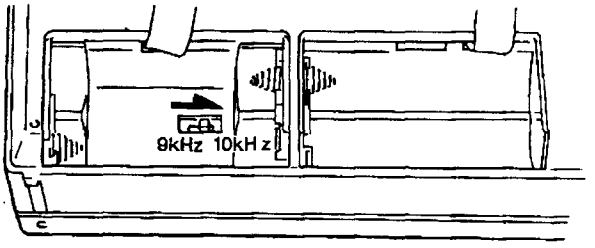
If you input a wrong frequency
Press [FM] or [AM] again and input the correct frequency.

The [TRY AGAIN] ! indication
If you input a frequency outside the frequency range (FM 87.6 to 108.0 MHz for the type 1 model, FM 76.0 to 108.0 MHz for the type 2 model, AM 153 to 29,995 kHz), the indication [TRY AGAIN] ! will flash on and off in the frequency display. When you input a proper frequency, [TRY AGAIN] ! indication will disappear. If you leave [TRY AGAIN] ! indication flashing, it will disappear after about 5 seconds, and the tuned station's frequency will reappear.

HOW TO CHANGE THE MW TUNING INTERVAL

The MW tuning interval is preset at the factory to 9 kHz to match th frequency allocation system of most countries.
If you use the radio where the frequency allocation system is based o a 10 kHz interval, such as in the U.S.A. and Canada, set th 9 kHz/10 kHz selector in the computer back up/clock battery compar ment to 10 kHz.

(rear)



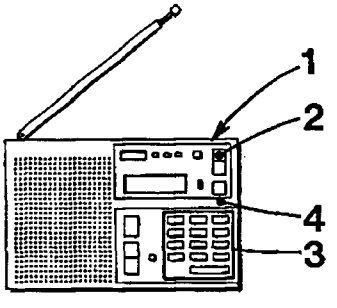
1 Remove both the radio and computer back up/clock batteries.
2 Switch the selector in the direction of the arrow.
3 Put the batteries back in the compartment and close the lid.

Note: After removing the batteries, be sure to preset the stations an set the timer again. When the batteries are removed, the preset st tions and the timer-setting time will be erased.

PRESET TUNING

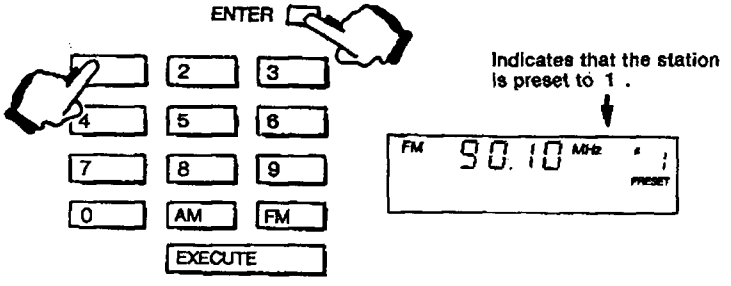
HOW TO PRESET

The numbers in the illustration refer to the sequence of operations.



1 Set the MAIN POWER switch to ON.
2 Press the ON button.
3 Tune in the desired station using any tuning method—dir tuning, scan tuning (page 20) or manual tuning (page 22). Press [EXECUTE] for direct tuning.

4 To preset the station being received, while pressing the ENTER key, press one of the ten counter keys.



Notes

- The AM 153 kHz frequency is preset to all counter keys at the factory.
- Either an FM station or an AM station can be preset to the counter keys, for a total of 10 stations.
- If you preset another station to a key on which you have already preset a station, the first station will be erased.

You cannot erase a station without presetting another station.

TO CHECK YOUR PRESETTING

After presetting the stations, press each counter key 1 to 0 in turn to check that the desired stations have been preset correctly. You can get this station anytime by pressing the counter key.

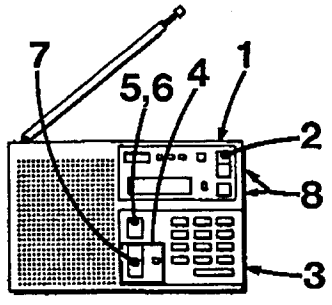
TO TUNE IN A PRESET STATION

1 Set the MAIN POWER switch to ON.
2 Press the appropriate counter key. The preset station will be tuned in.

Note: After removing both the radio and computer back up/clock batteries, be sure to preset stations again. When the batteries are removed, all preset stations will be erased.

SCAN TUNING

After receiving a broadcast band by direct tuning, preset tuning or manual tuning, use scan tuning to automatically scan the stations in the frequency range of the broadcast band being received. Scanning stops automatically at each station for 1.5 seconds and the program being broadcast will be heard. As soon as you hear the desired station, press START/STOP to stop the scanning, then press ▲ key or ▼ key to tune in more precisely, if necessary.
The numbers in the illustration refer to the sequence of operations.



1 Set the MAIN POWER switch to ON.
2 Press the ON button.
3 Slide the VOLUME control to get sound.
4 While pressing the BAND SELECT key, press ▲ key or ▼ key to search the desired broadcast band. See page 21.
Each time ▲ key or ▼ key is pressed then immediately released, the display changes by one. When the key is kept depressed, the display changes continuously.
5 Press START/STOP. Scan tuning of the broadcast band being received will begin and stop automatically for 1.5 seconds when a station is received.
6 Press START/STOP to stop the scanning to listen to the station being received more than 1.5 seconds.
Repeat these steps 5 and 6 until the desired station is received.
7 Press ▲ or ▼ to tune in precisely. See page 21.
8 Adjust the FINE TUNING control, if necessary.

- Adjust the telescopic antenna.

If reception is unsatisfactory with the telescopic antenna, connect the supplied external antenna. See page 24.

- Adjust the volume with the VOLUME control and the tone quality with the TONE control.

Notes

- It may happen that a station with weak signals cannot be tuned in by scan tuning.
- Scanning may stop when there is noise.

Note on scanning

When you press START/STOP, scanning will begin in the range of the broadcast band being received at the intervals listed on page 21. When the upper limit of the frequency of that band is reached, the dial will be scanned back to the lower limit.
To stop scanning, press START/STOP again.

To tune in more precisely

It may happen that scanning stops a little before or after the exact frequency, even if you press START/STOP as soon as you hear the station. If this happens, tune in the station by pressing ▲ key or ▼ key.

Note on broadcast bands

The broadcast bands are FM, LW, MW and SW and the SW is divided into thirteen meter bands. You will find in the following list the broadcast bands and meter bands you can choose with the BAND SELECT key and each band's frequency range and tuning interval.

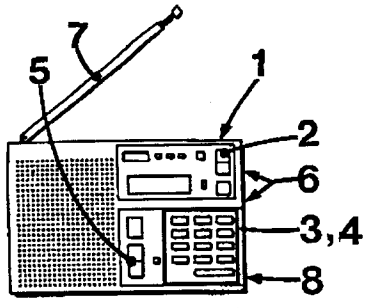
The frequency range and the tuning interval of each broadcast band

	Broadcast band	Frequency range	Tuning intervals
	F M	87.6 MHz–108.0 MHz (type 1 model) 76.0 MHz–108.0 MHz (type 2 model)	0.1 MHz
	L W	153 kHz–519 kHz	3 kHz
	M W	522 kHz–1611 kHz (520 kHz–1610 kHz)	9 kHz (10 kHz)
S W	*	1615 kHz–3895 kHz	5 kHz
	75 meter band	3900 kHz–3995 kHz	
	60 meter band	4700 kHz–5195 kHz	
	49 meter band	5900 kHz–6195 kHz	
	41 meter band	7100 kHz–7395 kHz	
	31 meter band	9500 kHz–9995 kHz	
	25 meter band	11600 kHz–12195 kHz	
	21 meter band	13500 kHz–13795 kHz	
	19 meter band	15100 kHz–15595 kHz	
	16 meter band	17500 kHz–17995 kHz	
	13 meter band	21400 kHz–21895 kHz	
	*	21900 kHz–26100 kHz	
	*	26105 kHz–29995 kHz	

* These frequencies can be tuned in either by direct tuning or manual tuning but cannot be selected with the BAND SELECT key.

MANUAL TUNING

Use manual tuning when you do not know the frequency of the station you want to tune in, or when you want to tune in a station more precisely after scan tuning.
The numbers in the illustration refer to the sequence of operations.



1 Set the MAIN POWER switch to ON.
2 Press the ON button.
3 Press [FM] or [AM] and input the approximate frequency of the desired station.
4 Press [EXECUTE].
5 Press [▲] to increase the frequency or [▼] to decrease the frequency until the station is tuned in. If you keep the key depressed, the frequency changes continuously.
6 Tune in more precisely with the FINE TUNING control, if necessary.
7 Adjust the antenna.
8 Adjust the volume with the VOLUME control and the tone quality with the TONE control.

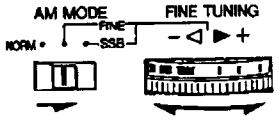
Note: Each time you press [▲▼], the frequency band being tuned will change from LW to MW, to SW, to FM, then back to LW.
The scanning intervals are shown in the list on page 21.

HOW TO TUNE IN PRECISELY

—Using the AM MODE selector and the FINE TUNING control.

This radio receives the station at the interval of frequency shown in the list on page 21. To receive a station whose frequency does not coincide with this interval, it is necessary to adjust the tuning in ±5 kHz range. In this case, the frequency display will not change.

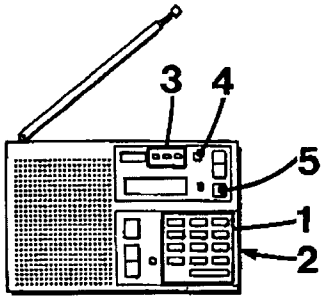
1 Set the AM MODE selector.
NORM: Normally set the selector to this position.
FINE: For LW/MW/SW reception
SSB: For SSB/CW reception
2 Adjust the tuning with the FINE TUNING control.
+: For a frequency up to approx. 5 kHz higher
−: For a frequency up to approx. 5 kHz lower



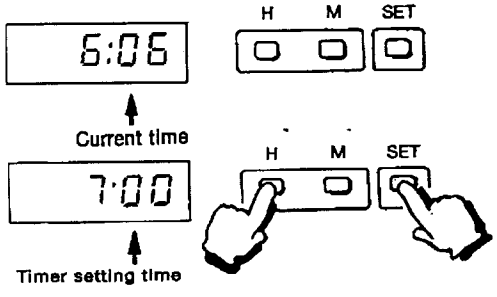
HOW TO TURN ON THE RADIO AUTOMATICALLY

—Using the timer standby function

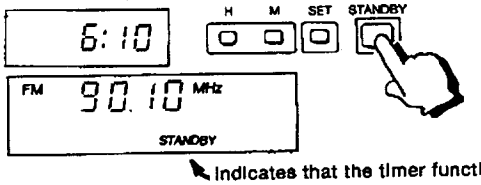
The radio can be set to receive the station at a particular time by setting the timer.
Follow the numbers in sequence.



1 Tune in the desired station.
2 Adjust the volume with the VOLUME control.
3 While pressing the SET button, press the H button and the M button to set the time when you want to receive the station.
The timer's time indication will revert to that of the current time as soon as you release the SET button. To check the time set on the timer, press this button again.



4 Press the STANDBY button to set the timer.



Indicates that the timer function activiates.

5 Press the OFF button to turn off the radio. STANDBY will continue to be displayed.

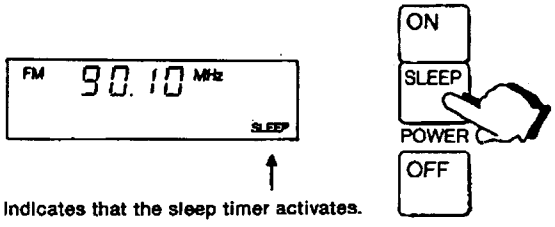
Notes

- **Check that the MAIN POWER switch is set to ON.** If it is set to OFF, the timer will not activate.
- SLEEP will be displayed at the time set on the timer, and the radio will be automatically turned off 65 minutes later.
- After setting the timer, if you tune in another station and turn off the radio, the last station to be tuned in will be received when the timer turns the radio on.
- If you want to cancel the timer, press the STANDBY button again. The display will disappear.

HOW TO TURN THE RADIO OFF AUTOMATICALLY

Use the sleep timer of this radio to turn it off 65 minutes after auto
matically.
The numbers in the illustration refer to the sequence of operations.

1 Tune in the desired station.
2 Press the SLEEP button.
The radio activates and turns off automatically after 65 minutes.



Indicates that the sleep timer activates.

Notes

- To turn off the radio before the end of the sleep timer operation, just press the OFF button.
- If you press the ON button during the sleep timer operation, the sleep timer will be cancelled and the radio will not be turned off automatically.
- If you press the SLEEP button after the radio is turned off, the sleep timer activates and the last station to be tuned in will be received.

EXTERNAL ANTENNA CONNECTION

FOR SW RECEPTION

Usually the telescopic antenna is sufficient for SW reception. However in a building or for more stable SW reception, the use of the supplied SW external antenna is recommended.

Connection

See illustration G on page 5.

1 Connect the spade lug of the SW external antenna to the appropriate terminal of the supplied antenna connector.
2 Extend the wire outdoors as high as possible and connect the antenna connector to the EXT ANT jack of the radio.

When reception is noisy, connect a ground wire. Connect the end of the ground wire to the other terminal of the antenna connector, and the other end directly to a convenient earth ground.

Notes

- To receive MW or LW broadcasts, be sure to disconnect the antenna connector. If connected, the built-in ferrite bar antenna does not activate so you cannot receive MW or LW broadcasts.
- You could cause a fire if you connect a ground wire to a gas pipe. Never do it.
- When there is lightning and you are using an external antenna immediately disconnect the ac power adaptor (if connected) from the wall outlet. Never touch the antenna wire when there is lightning storm.

FOR FM RECEPTION

In a steel-frame building, a mountainous area, at a distance from the transmitter or in a location where ignition noise is severe, FM reception

may be unsatisfactory with the telescopic antenna. In this case, connect a commercially available external FM antenna and a 75-ohm coaxial cable.

Connection

See illustration [H] on page 5.

1 Connect the optional 75-ohm coaxial cable to the antenna connector.
2 Connect the antenna connector to the EXT ANT jack of the radio.

Notes

- When using an external antenna, retract the telescopic antenna.
- Locate an outdoor antenna as far away from the street as possible.
- For further details, see the antenna's instruction manual.

FOR MW AND LW RECEPTION

Use an optional AN-1 wide range antenna for better reception.

Connection

See illustration [I] on page 5.

Connect the OUTPUT of the antenna controller* and the INPUT of the antenna coupler* with the RK-69A connecting cord* or connect the OUTPUT of the antenna cotroller and the EXT ANT of the ICF-7600D with the connecting cord.

*supplied with the AN-1 wide range antenna

Note: To receive MW or LW broadcasts, be sure to disconnect the antenna connector. If connected, the built-in ferrite bar antenna does not activate and you cannot receive MW or LW.

SPECIFICATIONS

Circuit system	FM: Superheterodyne AM: Dual conversion superheterodyne
Frequency range	FM: 87.6–108.0 MHz (for the type 1 model) 76.0–108.0 MHz (for the type 2 model) MW: 522–1611 kHz SW: 1615–29995 kHz LW: 153–519 kHz SSB/CW: 153–29995 kHz
Antennas	Telescopic antenna (FM/SW) Built-in ferrite bar antenna (MW/LW) External antenna terminal (FM/LW/MW/SW)
Speaker	Approx. 7.7 cm (3⅛ inches) diameter
Power output	200 mW (at 10% harmonic distortion, for United Kingdom) 400 mW (at 10% harmonic distortion, for other countries)
Outputs	Recording output jack (minijack) output level 0.775 mV (–60 dB) output impedance 1 kilohm Earphone jack (minijack) for 8 ohm earphone
Power requirements	Radio: 6 V dc Four IEC designation R6 batteries (size AA) Supplied AC-240 ac power adaptor (110, 120, 220 or 240 V ac adjustable, 50/60 Hz) Optional DCC-127A or DCC-240 car battery cord for use with 12 V or 24 V car battery, respectively Computer back up/clock: 3 V dc, two IEC designation R6 batteries (size AA)

Battery life	Radio: approx. 12 hours of listening for four hours at a normal volume, using Sony SUM-3(NS) New Super batteries Computer back up/clock: approx. 1 year of continuous operation with Sony SUM-3 (NS) New Super batteries
Dimensions	Approx. 184.5×118.5×32 mm (w/h/d) ($7\frac{3}{8}\times4\frac{3}{4}\times1\frac{5}{16}$ inches) including projecting parts and controls
Weight	Approx. 640 g (1.4 lb) including batteries
Accessories supplied	Earphone (1) SW external antenna (1) AC-240 ac power adaptor (1) Wave handbook (1), Antenna connector (1), Carrying case (1)

While the information given is true at the time of printing, small production changes in the course of our company's policy of improvement through research, and design might not necessarily be indicated in the specifications. We would ask you to check with your appointed Sony dealer if clarification on any point is required.

Optional accessories

Car battery cord	DCC-127A, DCC-240
Connecting cord	RK-69A (miniplug to miniplug)

TROUBLESHOOTING GUIDE

Should any problem occur with the set, make the following simple tests to determine whether or not servicing is required.
If the problem persists after you have made these tests, consult the nearest Sony dealer for further information.

The power is not turned on even if you press the ON button.

- Weak radio batteries.
- Incorrect polarity of radio batteries. See page 4.
- The MAIN POWER switch is set to OFF.
- The ac power adaptor or a car battery cord is not connected on ac operation.
- Battery operation is attempted while an ac power adaptor or a car battery cord is connected to the set, but not to a wall outlet or cigarette lighter socket.

No display in the time display

- Incorrect polarity of computer back up/clock batteries. See page 4.
- Weak computer back up/clock batteries.

Display is dim.

- Weak radio or computer back up/clock batteries.

➡ Replace all the radio batteries with new ones for the frequency display or the computer back up/clock batteries with new ones for the time display.

- The set is being used in extremely high temperatures or in a place with excessive moisture.

Sound is not heard at all.

- The VOLUME control is turned down completely.
- The earphone is plugged in.
- Incorrect polarity of radio batteries. See page 4.

Very weak or interrupted sound, or unsatisfactory reception.

- Weak radio batteries.
- Tuning or antenna adjustment is not correct.

➡ Tune in correctly with the FINE TUNING control for AM reception. See page 22. For antenna adjustment, see page 14.

- Weak signal. ➡ When in a vehicle or in a building, listen near a window.
- Figures on the frequency display differ a little from the acted station frequency. ➡ Tune more precisely with the FINE TUNING control. See page 22.

Frequency cannot be input when direct tuning.

- [EXECUTE] was not pressed within 5 seconds after the counter keys have been pressed.

Presetting frequency cannot be input.

- [EXECUTE] was not pressed after the counter keys have been pressed. ➡ To input a frequency, while pressing the ENTER key, press one of the counter keys.

The preset station cannot be received when preset tuning.

- Incorrect preset station key is preset.
- The preset station is erased. ➡ After replacing both the radio and computer back up/clock batteries, preset the station again.

The radio does not turned on at the timer-setting time.

- The STANDBY button has not been pressed.
- The timer setting-time is erased.

➡ After replacing both the radio and computer back-up/clock batteries, set the timer again.

- The MAIN POWER switch is set to OFF.